FOOD AND NUTRITION

Paper 6065/01
Written

General Comments

A wide range of marks was achieved in this paper. Some candidates scored well, demonstrating sound knowledge of the subject and an ability to apply that knowledge to a range of questions. Examples were given where appropriate. The performance of some candidates, however, was disappointing. Sometimes they were unable to give basic facts so were not able to give explanations or examples to illustrate points. Consequently marks were poor. Some answers suggested that questions had not been read carefully because the information given in the answers was not relevant to the topic. The importance of reading questions carefully and planning answers cannot be stressed enough. Many answers showed little evidence of planning; they were brief and gave little information.

There seemed to have been sufficient time to answer the required number of questions. There were, however, a number of rubric errors. Some candidates did not attempt to answer the required number of ***Section B*** questions; others answered all of the questions in ***Section B***. Handwriting was generally good although there were a few scripts that were very difficult to decipher because the handwriting was too small. Teachers should remind candidates of the need for handwriting that is easy to read. Many candidates seemed to have been guided by the mark and space allocations for each part of ***Section A*** but in ***Section B*** there were examples of answers covering just a few lines. The presentation of scripts was generally good but many candidates did not complete the grid on the front cover to indicate their chosen ***Section B*** questions. It is time-consuming for Examiners to look through scripts and complete the grid before marking can be started. Additional pages were often tied too tightly making it difficult to turn pages without tearing the answer paper. Sometimes pages were assembled n the wrong order. Candidates are responsible for checking that all instructions have been followed and that pages are in the correct order before work is handed in. Candidates must be reminded that each answer must be clearly separated form the others, whether by ruling a line across the page or by leaving at least one line. It is preferable to leave a line between each part of the question and to draw a line across the page at the end of the question. There is no need to begin each answer on a different page or to write on only one side of the answer paper.

Comments on specific questions

Section A

Question 1

(a) (i) Candidates knew that carbohydrate is composed of carbon, hydrogen and oxygen.

(ii) Many candidates gave the required number of different uses of energy. Some noted that energy could be mechanical, electrical, chemical and energy in the form of heat. Other answers were examples of ways in which energy is used. Credit was given for whichever approach was taken.

(iii) Most answers referred to the need to reduce the amount of sugar in the diet because of its association with obesity since excess sugar is stored as fat. Often it was noted that obesity could be linked to coronary heart disease, diabetes, breathlessness and lethargy. It was surprising that few candidates mentioned that sugar could cause tooth decay and gum disease.

(iv) There were many excellent accounts of the digestion of starch. Those candidates who were able to state the names of the enzymes in each part of the digestive system, their sources, for example pancreatic juice, and their reactions scored full marks. No credit was given for details on the absorption of glucose in the ileum since only digestion was asked for.

(v) Non-Starch Polysaccharide was known to be associated with the removal of waste. It was known to absorb water, soften and increase the bulk of body waste and to stimulate peristalsis. Details were usually given of the consequences of a poor supply of NSP.

(vi) Sources of NSP were well known but some candidates gave very general examples such as fruit and vegetables. Specific examples were required since good examples were asked for. Wholegrain cereals were credited but brown bread was not. Named breakfast cereals were allowed if they were known to be good sources of NSP.

(b) (i) Many candidates accurately noted the functions of vitamin C. Vitamin C was known to be associated with the production of connective tissue, the healing of wounds and the production of blood and blood vessels. Credit was given for noting that vitamin C can be used for growth and for the maintenance of healthy skin, for mentioning that it is used as an antioxidant and that it helps the body to absorb iron.

The sources of vitamin C were usually given as citrus fruit, green vegetables, tomatoes and strawberries although many other examples were credited if appropriate.

Scurvy was known to be the deficiency disease associated with vitamin C.

(ii) It was encouraging to note that the majority of candidates were able to state that iron is required for the formation of haemoglobin, the red pigment in blood. Some answers included good accounts of the transport of oxygen to cells by haemoglobin. Better answers highlighted the importance of oxygen for the production of energy.

The most frequently given sources of iron were liver, kidney and chocolate. No credit was given for naming meat as a source; red meat was expected. Green vegetables and eggs were known to contain iron.

Anaemia was known to be the deficiency disease associated with iron.

(c) (i) Many reasons for following a vegetarian diet were suggested although answers often lacked explanation. Religions, the objection to the slaughter of animals and a dislike of the taste or smell of animal flesh were usually mentioned. Many candidates noted that a vegetarian diet is healthier. There is no evidence to suggest that this is true. Some candidates did, however, explain that some people choose to avoid animal fats because they are saturated fats and are associated with cholesterol and CHD. Credit was given to any correct facts and explanations on the choice of vegetarian diets.

(ii) It was expected that candidates would note that lacto-vegetarians and lacto-ovo-vegetarians could consume milk, cheese and eggs so they should have sufficient HBV protein in their diet. A definition of complementary protein with at least one example was usually given, soya beans and soya products were mentioned and TVP sometimes referred to. Poorer answers gave little information on either soya or combining different LBV proteins.

Section B

Question 2

(a) (i) Descriptions of kneading were often disappointing. It was expected that candidates would state that it develops gluten, a protein in flour. Gluten gives dough its elasticity so that it can stretch during rising. Kneading also distributes the yeast evenly in the dough and helps to give a smooth result. The heel of the hand or the knuckles are used for large pieces of dough and the fingertips for small pieces.

(ii) Most candidates were able to give one or two correct facts about proving. Most stated that the dough is left in a warm place for some time after which it will have risen to double its size. Better answers noted that dough is proved after it has been shaped and is the stage immediately before baking. If over-proved the dough will collapse and cannot recover.

(b) There were many suitable suggestions for bread flour. It should be hard or strong flour because of its high gluten content. Plain white flour is often used but wholemeal flour gives a nutty flavour, a brown colour and NSP. It does, however contain less gluten so the bread will have a closer

texture. Credit was given for stating that self-raising flour would not be a suitable choice because it contains a chemical raising agent, whereas yeast is the raising agent in bread.

(c) Descriptions of the changes, which take place when bread is baked, were often very brief. Often they were limited to stating that the bread rises and a brown crust forms on the outside. The best answers explained that the bread rises because carbon dioxide is evolved during fermentation and that gases expand when heated, pushing up the dough. Alcohol evaporates and water turns to steam. This gives additional lift to the dough. Eventually the heat of the oven kills the yeast. The starch gelatinises during baking and effect of dry heat on the outside of the bread causes the starch to change to dextrin. The sugar in the bread caramelises and there will be some Maillard browning.

Question 3

(a) Coagulation was generally known to refer to the effect of heat on protein. Candidates frequently gave the temperature at which this irreversible change happens. Examples included the setting of quiche, boiled egg and the coating on fried fish.

(b) Many candidates gained full marks for their explanation of fermentation. It was usually stated that the process involves yeast and is one of the processes in bread-making. Yeast requires warmth, moisture, food and time to produce carbon dioxide and alcohol. Most candidates gave this information. Some answers included detail on the enzymes that bring about fermentation. Credit was given where appropriate.

(c) There were many excellent explanations of gelatinisation which refers to the effect of moist heat on starch. Some candidates gave sauce as an example of the process, others the boiling of rice. It was surprising that a number of candidates described the use of gelatin since this process is not known as gelatinisation.

(d) Few candidates were able to explain the process of hydrogenation. It was expected that hydrogenation would be known to be the process whereby liquid oils are converted into solid fats, for example when making margarine. Unsaturated fats have double bonds in their structure so are able to take up more hydrogen atoms. The process can be stopped at any time in order to achieve the degree of hardness required.

(e) Pasteurisation was explained well by the majority of candidates. It was known to refer to the heat treatment of milk to destroy harmful bacteria and to give it a longer shelf life. Credit was given for stating the correct temperatures and times for the process.

Question 4

(a) (i) Candidates could usually state at least two of the conditions required for bacterial growth. Credit was given for mentioning warmth, moisture, time, oxygen and a suitable pH as well as a source of food.

(ii) The symptoms of food poisoning were known to include vomiting, diarrhoea, headache, abdominal pain, fever and exhaustion. Any other correct information was given credit.

(b) (i) There were many excellent accounts of the storage of food to prevent food poisoning. Points to remember when storing food in a refrigerator were noted. These included the need for containers to be clean and covered to prevent cross contamination. Some candidates gave the recommended temperature for a refrigerator but seldom noted that refrigeration only slows down deterioration whereas freezing halts the growth of bacteria. It was usually stated that the expiry date on packaged food should be observed and that food should be used in rotation. It was well known that raw and cooked food should be separated and that raw meat must be kept at the bottom of the refrigerator to avoid juices dripping onto other foods.

(ii) There were many very good accounts of the preparation of food to prevent food poisoning. Personal hygiene was discussed well as was the need to avoid insects and animals in the kitchen. The disposal of kitchen waste was usually mentioned, as was the need to ensure that all equipment use is cleaned thoroughly before and after use. The need for separate equipment for raw and cooked foods was emphasised. Many candidates correctly stated that frozen food should be completely defrosted before it is cooked otherwise the heat of the oven may be used to melt the

ice in the Centre and not to cook the food. Few candidates mentioned the need for boiling dishcloths and drying cloths in order to sterilise. It was disappointing that frequently warm water was suggested for washing dishes. Credit was given to those who stated that hot, soapy water should be used to remove grease and traces of food.

(iii) There were few good accounts of ways of preventing food poisoning when cooking food. It was expected that candidates would note that the temperature of food must reach 72°C for at least 2 minutes to ensure that bacteria are destroyed. It was often correctly noted that food must be served immediately after cooking because bacteria will multiply when food is reheated or when it is allowed to stand in a warm place. Better candidates stated that eggs, if not properly cooked, may still contain Salmonella bacteria. Credit was given to all correct facts, explanations and examples.

Question 5

(a) There were many detailed paragraphs on safety when deep frying. It was well known that the pan should not be overfilled with oil to prevent overflowing when the food is added. Most stated that food should be dry before frying and that it must be added carefully to prevent splashing. The dangers of fire associated with overheating fat were well known. It was encouraging to note that in most answers safety points were well explained.

(b) The information given on microwave cooking was limited. It was known to be a quick method of cooking for which special containers are required. Metal and some plastics are unsuitable. It was often mentioned that washing up can be saved because food can be cooked and served in the same container. A microwave oven can be used for defrosting and reheating as well as for cooking. It was a matter of some concern to note that many candidates considered it to be a dangerous method of cooking because radiation is involved. A link with cancer was often suggested. There is no substance in this; microwave ovens would not be in use if there was a health risk. It is safe to use because microwaves can only be emitted when the door is closed; it cannot be operated if the door is open. It was well known that there is less destruction of vitamins, for example vitamin C , because of the short cooking time and that the colour of vegetables remains bright although foods cannot be browned or made crisp by microwave cooking.

(c) There were many good accounts on the choice and care of saucepans. Stainless steel was known to be a suitable material because it conducts heat well and does not rust. Aluminium, although light in weight, will dent easily when dropped. Plastic and wooden handles will not get hot because those materials are poor conductors of heat. The advantages of non-stick surfaces on pans were often mentioned. It was frequently suggested that a variety of different sizes would be useful for different purposes. Most candidates suggested that the best that could be afforded should be bought because such pans would last longer.

It was usually noted that pans must be washed well to remove all traces of food and should be dried thoroughly to prevent rusting. Better answers recommended soaking to loosen food before washing to avoid the risk of scratching the surface of the pan when cleaning. It was well known that sharp objects should not be used in non-stick pans to avoid damaging the surface.

Question 6

(a) There were many candidates who gave six excellent points to consider when planning meals. Consideration of time, money and equipment were noted and the age, health and activity of those taking the meal was acknowledged. The need to include a variety of colour, flavour and texture in the meal was also mentioned.

There were many possible answers and credit was given whenever appropriate.

(b) The needs of the elderly were well understood by many candidates. It was often correctly stated that they require fewer carbohydrate foods because their energy needs are reduced, and that fat, sugar and salt should be reduced because of the risk of CHD, obesity, diabetes and hypertension. Other nutritional requirements noted included protein, calcium, vitamin D, iron and vitamin C. It was expected that the reason for the inclusion of each nutrient mentioned would be given.

(c) There were many possible explanations for the importance of fresh fruit and vegetables in the diet. Many answers named nutrients found in fruit and vegetables and gave a named example of a good source. Sometimes one of the functions of the nutrient was given. NSP and water were known to

be present in fruit and vegetables and the results of a deficiency were mentioned. Credit was given to those who noted that many dishes can be made from fruit and vegetables and that they can be cooked in a variety of ways or can be eaten raw. They are easy to carry and easy to eat so are useful snacks. Credit was given for naming dishes, which could be made, for example soups, pies and salads. Many answers were awarded full marks.

Question 7

(a) There were few good accounts of how to line and bake a pastry case 'blind'. It was expected that candidates would state that shortcrust pastry is rolled to the size of the flan ring plus enough pastry to cover the sides. The pastry is carefully eased into the tin and a rolling pin used to remove excess pastry. Greaseproof paper is placed in the empty case and baking beans used to prevent the base from rising and the sides from collapsing. The beans are removed near the end of the cooking time to allow the pastry to dry out. Pastry cases are baked in this way when the filling used may not need to be baked at the same temperature as the pastry, for example a lemon meringue pie or a fruit flan.

(b) It was surprising that few candidates were able to describe the rolling and folding of flaky pastry. Full marks were available for those who described rolling the dough to a rectangle with a length three times the width. The addition of fat over two thirds of the surface, folding, sealing and chilling should have been described. After repeating the procedure to use up all of the fat the pastry could be used to make sausage rolls, Eccles cakes, savoury plait and so on. Few explanations were given for any of the stages although it was known that sealing the edges of the pastry prevents the loss of trapped air and that chilling the pastry between each rolling allows the fat to harden and the gluten to relax. This makes rolling easier and prevents shrinking when the pastry is baked. Credit was given if some of the information was shown in diagrams.

(c) Most candidates who chose this question were able to give some useful information on coating. They usually noted that the food to be coated must be dry otherwise the egg will be diluted and will be less effective at holding the breadcrumbs. It was known that coating prevents the food from breaking up during frying and protects it from the intense heat of the fat. Better candidates explained that the egg coagulates when placed in hot fat and forms a seal around the food so that fat cannot reach it. The most frequently given examples were fish and Scotch eggs.

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Paper 6065/02

Practical

General comments

Many candidates produced work of a reasonable standard. The majority of Centres arranged their work in the correct candidate order, labelled the work clearly and sent the top copies together with all the correct mark sheets to CIE. A few Centres did not send the work in the correct order and did not ensure that candidates labelled their work with the number of the test which they had been allocated. Some Centres sent both copies of the work to CIE. The top copies of the examination sheets should be retained for use by the Examiner and then forwarded to CIE after the practical examination. The second copies (pink) should be used by the candidates during the practical examination and should then be collected in and retained at the Centre until after the publication of results, as this is the only copy of the candidates' work if the top copy should go missing.

It is very important that all work shows evidence of marking and that there is detailed annotation which is personal to the work of each candidate. There was some excellent annotation but some Centres provided very little or no annotation at all, while a few others used the same words for the work of every candidate. In the same way the marking should be individual to each candidate. It should not be the case that every candidate in the Centre should have full marks for Choice as each individual's choice is different for each question. Often marks should have been deducted for missing dishes, repetitive methods/foods, etc.

Tests should be "allocated to the candidates in strict alphabetical order" and some Centres were still not following this regulation. It is not a requirement that photographs should be sent with the candidates' work but photographs are certainly very helpful in verifying the marks allocated, particularly in the Results section. Many Centres did send photographs which were very helpful. However, it is important that if photographs are sent they are labelled clearly with the name of the candidate and the names of the dishes being shown. A series of dishes labelled with the candidate's name only may not always make clear exactly what each dish is supposed to be.

In the Choice section candidates should list and give the recipes for the dishes which they have chosen to answer the question. The dishes should be labelled for ***sections (a)*** and ***(b)*** and should make clear which dishes are to be served for the meal if this is a requirement of the question. Candidates did not always choose dishes carefully so that in some cases accompaniments were missing from the meals or a series of dishes with low skills were chosen. Full marks should not be awarded in these cases. It is very important first of all that the choice of dishes answers the question set. If particular types of biscuits/cakes/pastry mixtures are required, e.g. rubbed in, melted, shortcrust pastry, etc., candidates need to ensure that they have chosen to make dishes by the correct method. A good variety of skills, flavours and textures should be shown and marks should be reduced if the dishes chosen do not show this. On some occasions full marks were awarded for low skill dishes, e.g. salads, and for repetitive methods, e.g. frying. Recipes are required in this section and these should list the foods required, with exact amounts and descriptions, e.g. types of meat/fish. Candidates should not be giving methods in this section.

Many candidates produced good time plans with named dishes, brief methods, temperatures and times for cooking, times for washing up and serving details. Candidates should only be allowed 2 ½ hours for cooking and should fill all this time with skilful work. The first dish should be shown to start at a particular time, e.g. 9.00 am with the next dish starting at 9.20 am, etc. Candidates should not be simply listing "10 minutes", "15 minutes", etc. for each dish as this makes it difficult to know the amount of time still available before the end of the test. Preheating of ovens should be shown, but only for 10 – 15 minutes, as longer than this is not economical. Dovetailing in the preparation of dishes should be shown so that candidates are not simply making one dish after another and waiting while each dish cooks. Washing up should be shown three times in the plan. Brief methods should be given. Some candidates had poor sequences in the time plan such as preparing dishes which needed setting or chilling too late in the plan or making cakes and attempting to ice them while they were still hot. Quite a number of candidates served their dishes as soon as they were ready throughout the test. Successful planning should include sequencing dishes so that meals can be served in

the correct order of courses towards the end of the test. Time should be allowed for serving and brief detail should be given about garnishes or decorations. Many shopping lists were good but candidates need to take care that they describe their ingredients, e.g. plain or self-raising flour, and that they list the exact amounts they require, not just to the nearest kilogram or packet.

The Methods and Results sections are marked by the Examiner at the Centre and should be supported by detailed annotation. Some Centres explained exactly what happened while the candidates were cooking and serving the dishes, other Centres said very little. The mark scheme states clearly that in the Methods section "where a candidate is preparing very simple dishes the maximum mark of 55 should be reduced accordingly" and in the Results section "the maximum marks must be reduced for simple dishes involving little skill". A number of Centres awarded high marks to all candidates regardless of the dishes being prepared. It should not be the case that candidates who prepare a few simple dishes should be awarded the same marks as candidates who prepare a series of complicated, skilful dishes. Some marks had to be adjusted where it was clear that the regulations had not been followed.

Comments on specific questions

Question 1

Candidates usually chose suitable dishes and accompaniments for the meal. In ***section (b)*** some candidates prepared dishes which showed little skill, e.g. sandwiches, or dishes which were unsuitable to carry easily without damage.

Question 2

This was the most popular question. A variety of dishes were prepared although not all choices were suitable for a child's party. In this type of question candidates need to ensure that dishes are attractive and that they include a good variety of colours, textures and flavours. Cakes were prepared but were often decorated before being allowed to cool, according to the time plan.

Question 3

Dishes chosen for the meal were generally suitable, although accompaniments were sometimes missing. In ***section (b)*** candidates usually chose two different raising agents and prepared skilful dishes.

Question 4

Many candidates who answered this question did not include good sources of Vitamin C as required by the question. The main course should have included fresh vegetables, cooked correctly to retain Vitamin C. Desserts could have included citrus fruits or other good sources of the vitamin. Shortcrust pastry dishes were satisfactory but often candidates made biscuits which were not the melting method as required by the question.

Question 5

Dishes showing different methods of cooking were prepared but these were not always very skilful. Additional dishes were made to complete the meal as required.

Question 6

This question was popular but was not always answered well. Quite a number of candidates prepared some dishes with low skills, e.g. lemonade, to illustrate the use of citrus fruit. Others used herbs in cooking but often these were dried and not fresh as required by the question.

Question 7

The few candidates who answered this question prepared suitable meals and made the correct types of biscuits and cakes required in ***section (b)***.

Question 8

This was not a very popular question. However those candidates who answered the question did so well, serving reasonable meals including sauces with either the savoury or the sweet part of the meal. Pastry dishes were prepared well as were the small cakes.